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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re application of

ANTHONY A. BARRETTO ET AL

Serial No. 10/066,295 (TI-33631)

Filed January 31, 2002

For: A METHOD FOR ALIGNING SUBSTRATES IN A TRAY

Art Unit 3729

Examiner Donghai D. Nguyen

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Jay M. Cantor, Reg. No. 19,906

BRIEF ON APPEAL

REAL PARTY IN INTEREST

The real party in interest is Texas Instruments Incorporated, a Delaware corporation with offices at 7839 Churchill Way, Dallas, Texas 75251.

RELATED APPEALS AND INTERFERENCES

There are no known related appeals and/or interferences.

STATUS OF CLAIMS

This is an appeal of claims 1 to 8, all of the rejected claims. No claims have been allowed. Please charge any costs to Deposit Account No. 20-0668.

STATUS OF AMENDMENTS

An amendment was not filed after an RCE and a second or later Office action.

SUMMARY OF INVENTION

The invention relates to a method of ensuring proper contact between a plurality of substrates and a lifting device with a plurality of vacuum pads in a semiconductor packaging process. The substrates (110) are placed, one each, in depressions in a substrate tray (300, see also Fig. 4), each depression having a hole (Figs. 3b and 3c, 410 in Fig. 4 and page 9, lines 19 to 21). A plate (310) with a plurality of protrusions (320) is provided and raised, each protrusion extending through a different one of the holes (Figs. 3b and 3c) and maintaining level or leveling the substrate in the corresponding depression while lifting the substrate concurrently with the other of the plurality of substrates in the other of the depressions (Fig. 3c). A lifting device (210) having vacuum pads (220) is provided and then lowered (Figs. 3b and 3c), the lifting device stopping when the vacuum pads from the lifting device come into contact with the substrates (Fig. 3c). A vacuum is applied at the vacuum pads to temporarily attach the substrates to the vacuum pads.

ISSUES

The issues on appeal are as follows:

1. Whether claims 1 to 7 are anticipated by Kiyokawa et al. (6, 019,564) under 35 U.S.C. 102(b).
2. Whether claim 8 is patentable over Kiyokawa et al. in view of Canella (6,135,291) under 35 U.S.C. 103(a).

GROUPING OF CLAIMS

The claims do not stand or fall together for reasons set forth hereinbelow under ARGUMENT.

ARGUMENT

With reference to the drawing objections, while it is agreed that more descriptive drawings could be provided, the fact remains that the holes and depressions are shown in Fig. 3c and the holes are shown in Fig 3b by virtue of the protrusions 320 extending into the plate 310. If it is assumed that the drawings are cross-sections, then no change is required. The holes 410 will be mentioned in the specification upon allowance of a claim.

ISSUE 1

Claims 1 to 7 were rejected under 35 U.S.C. 102(b) as being anticipated by Kiyokawa et al. The rejection is without merit.

It is initially noted that the amendment to claim 1 after final rejection was stated to raise new issues and require new search or consideration whereas no such consideration or search appears to be of record in making the present rejection which is identical to the original final rejection as to the art cited.

.Claim 1 requires the steps of providing a substrate tray having depressions therein with a substrate in each depression, each depression having a hole and the further step of providing and raising a plate with a plurality of protrusions, each protrusion extending through a different hole and maintaining level or leveling the substrate in the corresponding depression while lifting the substrate concurrently with the other of the plurality of substrates in the other of the depressions. No such steps are taught or

suggested by Kiyokawa et al. either alone or in the combination as claimed. In Kiyokawa et al., the substrate is item 4, the item with the depression and hole. However, the protrusion 14 does not enter the hole but rather appear to be a lifter for the substrate 4. It follows that this feature is not only not shown by Kiyokawa et al., but it is not even suggested. There is no issue of leveling of a chip in Kiyokawa et al. It follows that there can be no anticipation of the claimed subject matter under 35 U.S.C. 102.

Claims 2 to 7 depend from claim 1 and therefore define patentably over Kiyokawa et al. for at least the reasons presented above with reference to claim 1.

In addition, claim 2 further limits claim 1 by requiring that the protrusions on the plate be of sufficient height to lift the substrates up off the bottom of the tray. No such step is taught or suggested by Bahnck et al. either alone or in the combination as claimed.

Claim 3 further limits claim 1 by requiring that the protrusions on the plate be of sufficient height to lift the substrates up off the bottom of the tray and over the depressions in which they lie. No such step is taught or suggested by Kiyokawa et al. either alone or in the combination as claimed.

Claim 4 further limits claim 1 by requiring that the holes in the tray be sufficiently sized to permit the protrusions to come through the bottom of the tray. No such step is taught or suggested by Kiyokawa et al. either alone or in the combination as claimed.

Claim 5 further limits claim 4 by requiring that the holes in the tray be sufficiently small to prevent the substrates from falling through. No such step is taught or suggested by Kiyokawa et al. in the combination as claimed.

Claim 6 further limits claim 1 by requiring that the method further include the step of raising the lifting device out of the tray after applying the vacuum. No such step is taught or suggested by Kiyokawa et al. either alone or in the combination as claimed.

Claim 7 further limits claim 1 by requiring that the protrusions be arranged in a two-dimensional array on the plate. No such step is taught or suggested by Kiyokawa et al. in the combination as claimed.

ISSUE 2

Claim 8 was rejected under 35 U.S.C. 103(a) as being unpatentable over Kiyokawa et al. in view of Canella (U.S. 6,135,291). The rejection is without merit.

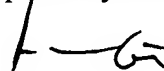
The arguments applied above with reference to the rejection of claim 1 applies as well to this rejection since Canella fails to overcome the deficiencies in Kiyokawa et al. as enumerated above with reference to claim 1.

In addition, claim 8 further limits claim 1 by requiring that the protrusions be arranged in a linear array on a strip and a plurality of strips be joined to form the plate. No such step is taught or suggested by the applied references in the combination as claimed.

CONCLUSIONS

For the reasons stated above, reversal of the final rejection and allowance of the claims on appeal is requested that justice be done in the premises.

Respectfully submitted,



Jay M. Cantor
Reg. No. 19906
(301) 424-0355

APPENDIX

The claims on appeal read as follows:

1. A method of ensuring proper contact between a plurality of substrates and a lifting device with a plurality of vacuum pads in a semiconductor packaging process wherein the substrates are placed, one each, in depressions in a substrate tray, each depression having a hole, the method comprising the steps of:

providing a substrate tray having depressions therein with a substrate in each said depression, each depression having a hole;

providing and raising a plate with a plurality of protrusions, each protrusion extending through a different said hole and maintaining level or leveling the substrate in the corresponding depression while lifting said substrate concurrently with the other of the plurality of substrates in the other of said depressions;

providing and then lowering the lifting device having vacuum pads onto the tray;

stopping the lifting device when the vacuum pads from the lifting device comes into contact with the substrates; and

applying a vacuum at the vacuum pads to temporarily attach the substrates to the vacuum pads.

2. The method of claim 1, wherein the protrusions on the plate are of sufficient height to lift the substrates up off the bottom of the tray.

3. The method of claim 1, wherein the protrusions on the plate are of sufficient height to lift the substrates up off the bottom of the tray and over the depressions in which they lie.

4. The method of claim 1, wherein the holes in the tray are sufficiently sized to permit the protrusions to come through the bottom of the tray.

5. The method of claim 4, wherein the holes in the tray are sufficiently small to prevent the substrates from falling through.

6. The method of claim 1, wherein the method further comprises the step of raising the lifting device out of the tray after applying the vacuum.

7. The method of claim 1, wherein the protrusions are arranged in a two-dimensional array on the plate.

8. The method of claim 1, wherein the protrusions are arranged in a linear array on a strip and a plurality of strips are joined to form the plate.